



American Cleaning Institute Development of Exposure Assessments

Glossary of Functional Classes

Abrasive: Abrasive ingredients are materials that are used to polish, buff, or scour away soils such as dirt and dust. Abrasives can be found in many cleaning products including, but not limited to, pot and pan cleaners, hand wash dish detergents, machine dish detergents, and powder laundry detergents.

Absorbent: Material used to retain other substances by assimilation.

Adhesion promoter: An adhesion promoter is used to bond and fasten two surfaces to each other.

Anticaking agent: Anticaking ingredients are added to powder or granule products to prevent the formation of clumps. These ingredients can also make the product easier to package into its final form.

Antioxidant: Antioxidants are used to maintain the quality, integrity and safety of cleaning products by inhibiting the oxidative degradation of the ingredients in the formula.

Antiredeposition agent: An ingredient used in laundry detergents to help prevent soil from resettling on fabrics after it has been removed during washing. Sodium carboxymethylcellulose (CMC) is the most widely used antiredeposition agent; the literature also mentions methylcellulose, polyvinylpyrrolidone (PVP), polyvinyl alcohol, and polyethylene glycol (PEG). Antiredeposition agents are adsorbed on both soil and fabrics, where they keep soil particles from resettling on fabrics being washed and act as a dispersing agent. Surfactants and complex phosphates also help prevent soil redeposition, although this is not their primary function.

Antiscaling agent: Antiscaling agents (also called descalers) are used to prevent the build up of or remove inorganic oxide deposits (scale, limescale) caused by the deposition of salts or minerals.

Antistatic: Antistatic ingredients are used to treat the surface of materials, such as clothing, to eliminate or reduce static electricity.

Biocide: Biocides (also known as antimicrobials) are any substance or product that inhibits the growth of microorganisms, such as bacteria, fungi, or protozoa. It may be used in soaps and detergents to produce bacteriostatic and bactericidal effects against both pathogens and non-pathogens (such as organisms causing body odor). Biocides used in washing and cleaning products range from highly complex bacteriostats, such as triclocarban, to the relatively commonplace pine oil and chlorine bleaches. Antimicrobials are used in deodorant bar soaps, in hard surface cleaners, in some laundry additives such as fabric softeners, and to a small extent in laundry detergents. They are also available as special products for adding to the rinse during laundering when there is concern for infectious organisms.

Binder: A binder is used to hold dry materials together to make tablets and other solid products.

Bittering agent: Bittering agents are added to consumer products to help in preventing accidental ingestion, especially by children.

Bleaching-Oxidizing agent: Bleaching/oxidizing agents are used in cleaning products to whiten and remove stains from clothing and to disinfect hard surfaces.

Brightener: A chemical compound that creates a visual whitening or brightening effect when exposed to near ultraviolet radiation by virtue of fluorescence, i.e. the conversion of invisible ultraviolet light into visible blue light. The fluorescent whitening agents used by the cleaning products industry share the further characteristic of adsorbing to fabrics during household laundering. The whiteness or brightness of the laundry is thus enhanced. Brighteners are included in all laundry detergents. Their effectiveness varies with type of fabric and concentration in the wash water. Their effect is cumulative to a degree, so that new fabrics exhibit increased fluorescence over a period of washes. Eventually, however, a leveling-off point is reached. In recent years an increasing number of fabrics have been pre-brightened in manufacture, i.e., have incorporated Brighteners, especially acrylic and polyester fabrics.

Builder: A material that enhances or maintains the cleaning efficiency of the surfactant. Several types of compounds, with different performance capabilities, are used. Builders have a number of functions, principally inactivation of water hardness. This is accomplished either by sequestration, i.e. holding hardness minerals in solution, by precipitation, or by ion exchange. Complex phosphates are common sequestering builders. Sodium carbonate is a precipitating builder. Sodium aluminosilicate is an ion exchange builder. Other functions of builders are to supply alkalinity to assist cleaning, especially of acid soils, to provide buffering so that alkalinity is maintained at an effective level, to aid in keeping removed soil from redepositing during washing, and to emulsify oily and greasy soils.

Chelating agent: A special type of sequestering agent that inactivates water hardness caused by metallic ions in water. Chelating agents are used in detergent formulations because they inactivate the hardness minerals calcium and magnesium, and reduce ill effects of other dissolved metals such as iron and manganese. Sodium citrate functions as a chelating agent when used as a builder.

Cleaning agent: Substance that is used to breakdown soils and stains that are attached to fabrics or solid surfaces into smaller, more soluble pieces for removal. Enzymes and other microbial cleaning agents are examples. Related cleaning product ingredients that function in different ways than cleaning agents are Surfactants, soaps, abrasives, solvents, and builders.

Corrosion Inhibitor: Corrosion inhibiting ingredients are added to cleaning products in order to help prevent corrosion on metal household surfaces (e.g. iron, copper, steel) as well as to prevent corrosion on the inside of metal packaging such as for aerosol products.

Defoamer: A defoamer or anti-foaming agent is added to a formula to inhibit the formation of foam in a detergent. In some products, the formation of foam may decrease the effectiveness of the detergent, thus defoamers work to prevent foaming while the product is being used. Defoaming ingredients can be used in cleaning products that come in a liquid or a powder form.

Deodorizer: Deodorizers are used to reduce or eliminate unpleasant odors.

Dispersing agent: Dispersing agents are added to cleaning products to ensure the proper separation of ingredients and prevent their settling.

Dye: Dyes are ingredients that are dissolved into and add a specific color to a cleaning product.

Emollient: Emollients are used to soften or soothe the skin. Emollient ingredients can be found in cleaning products intended to be applied by hand to a surface or material (e.g. hand-wash dish detergents).

Emulsifier: Emulsifiers are ingredients that encourage the suspension of one liquid in another. This creates a stable suspension of two liquids within a cleaning product that that will maintain an even distribution of ingredients and will not separate.

Film former: Film- forming ingredients are added to cleaning products to leave a pliable, continuous covering on hard surfaces. These layers help to shine, protect, or preserve the material they are applied to.

Foamant: A foamant or foaming agent is added to a formula to encourage the formation of foam in a detergent. The formation of foam in a cleaning product often increases the effectiveness of the detergent. Foamant ingredients can be found in cleaning products that come in both a liquid and a powder form.

Fragrance: Fragrance ingredients are used to create a specific aroma in a cleaning product. A cleaning product may contain a single fragrance ingredient or a combination of fragrance ingredients. These ingredients are added to everyday use cleaning products, such as dish and laundry detergents, in an effort to make the particular product impart a pleasing odor.

Opacifier: A constituent or additive that renders the system of which it is a part impervious to light rays. Opacifiers are sometimes used in liquid detergents to produce an esthetic or special effect. Such opacifying compounds are of large molecular structure and are water insoluble, but lend themselves to forming a stable colloidal dispersion. Titanium dioxide, a pigment, is widely used in milled soaps for opacification, or to reduce translucence, and may be used alone to make the bar white or, when dyes are added, to produce a desired color.

pH regulating agent: pH regulating agents are acids or bases that are added during the formulation of a cleaning product. The primary function of these agents is to maintain the pH of the overall formula when other ingredients with varying pH levels are added. The ideal pH for a cleaning product is dependent on the type of soil it is intended to remove. For example, to remove oils or dust requires a more alkaline cleaning product (pH over 7); to remove soap scum or water stains requires a more acidic cleaning product (pH under 7).

Pigment:- Pigments are insoluble ingredients that are dispersed into and add a specific color to a cleaning product mixture.

Preservative: A preservative is a substance that protects the product against the natural effects of aging, such as decay, discoloration, oxidation, and bacterial degradation. In soap products, preservatives are used to forestall and slow down the natural tendency to develop rancidity upon aging. In doing this, preservatives also project color and fragrance.

Processing aid, not otherwise listed: Processing aids are used to improve the processing characteristics of the manufacturing or the use of a product.

Process regulator: Process regulator is used to start, stop or change the rate of a chemical reaction and may be consumed as part of the reaction. Process regulators are used in cleaning products to activate bleaching agents, and inhibit etching in machine dish cleaning. Bleach activators are commonly used in laundry care products (particularly in granule form). Bleach activating ingredients are activated by the wash cycle and release oxygen, which works to bleach clothing. The addition of bleach activating ingredients also allows granule detergents to be more effective in lower temperature water.

Propellant: Propellants are ingredients used to dispense aerosol products from their containers.

Solubility enhancer: Solubility enhancing ingredients are added to a cleaning product formulation to help in manufacturing more concentrated products as well as to increase the amount of the final product that will dissolve in another substance.

Solvent: Solvents work by removing substances such as grease and oil from hard household surfaces and from clothing. Solvents are also be used in a cleaning product formula to aid in maintaining a stable product solution of different product ingredients.

Stabilizing agent: A stabilizing agent is used to keep a cleaning product mixture from changing its form or chemical nature and to prevent or slow down spontaneous changes in the ingredients.

Surfactant: An organic chemical that, when added to a liquid, changes the properties of that liquid at a surface. This is a basic function for products serving as detergents and as wetting, foaming, dispersing, emulsifying, and penetrating agents. Surface active agent is commonly shortened to surfactant. Surfactant molecules typically consist of a nonpolar hydrophobic portion, which is attached to a polar hydrophilic portion. Surfactants are classified by whether or not they ionize in solution and by the nature of their ionic or electrical charges. Categories of charges are called anionic, nonionic, cationic, or amphoteric. The anionic and nonionic surfactant types (for example, LAS, ethoxylated alcohol, alkyl sulfate, alpha olefin sulfonate, and soap) possess good cleaning properties and are important ingredients in household soaps and detergents. In most detergent products designed for washing clothes and dishes, the surfactant is a basic ingredient. Soap is basic to most body-washing products. All surfactants and soaps perform the important function of lowering water's surface tension, commonly known as making water "wetter." This enables the cleaning solution more quickly to wet out the surface being cleaned so that soil can be readily loosened and removed (usually with the aid of mechanical action). Surfactants are also instrumental in removing soils, both fatty and particulate, and in keeping them emulsified, suspended, and dispersed so that settling back on the surface is minimized. In addition to their leading role in laundry and light duty formulations, surfactants are used to some degree in most other household cleaning and washing products. They are the base of most liquid hard surface cleaners. Relatively small amounts of surfactant are usually included in powdered hard surface cleaners, cleansers, and automatic dishwasher detergents. Specialized surfactant applications include the use of cationic (quaternary ammonium compounds) to provide deodorizing and disinfecting action, while nonionic wetting agents are available for adding to the last rinse in automatic dishwashing to provide better draining of rinse water.

UV stabilizer: Exposure to ultra-violet light can change the properties of some ingredients found in detergents and all-purpose cleaners. A change in the chemical properties of a formula can lead to changes in the effectiveness of the cleaning product; therefore, UV stabilizing ingredients are added to some cleaning products help to protect the product from degradation by ultra-violet light.

Vehicle carrier: A vehicle carrier helps to dissolve or disperse solid components of a substance, allowing even dispersion throughout product. The vehicle carries other particles within the product.

Viscosity modifier: Viscosity modifying ingredients are ingredients that are added to the formulation to either increase or decrease the thickness and flow characteristics of a cleaning product.